



Brightwater

T R E A T M E N T S Y S T E M

Inside This Issue

- **Bothell Business Park murals**
- **Construction updates**
- **Tunneling to the Future
Celebration Recap**



Brightwater

T R E A T M E N T S Y S T E M

An Autumn View Not to Miss

Work on King County's Brightwater Project in Bothell created an added bonus this fall for people in the Bothell Business Park and those passing by the construction site at Northeast 195th Street and North Creek Parkway.

The project's newest series of bright floral murals created a striking sight combined with the business park's maple trees in full autumn blush, with red, yellow and orange leaves everywhere.

The murals are the second series of images at this location. The previous series featured forest scenes.

During planning for the project, business park owners and Brightwater staff came up with the idea to use murals to create an attractive addition to the 16-foot high wall that screens the construction site.


David Freed, King County community relations planner and an avid photographer, designed the colorful flower murals and the earlier woodland series. David visited local gardens to take the pictures, and worked with Anne Heartsong, business park property

manager, on the final design and placement of the murals. The business park and King County have agreed to periodically create new images for the wall.

At the North Creek construction site, the County's contractor has begun construc-



Photo by Leon Maday,
murals by David Freed

tion of the 19 foot diameter tunnel to the new wastewater treatment site north of Woodinville. Tunneling is expected to be completed in late 2008. 

Brightwater construction updates

King County is building a new wastewater treatment system called Brightwater to serve the growing needs of north King County and south Snohomish County.

Brightwater construction is underway at five sites; the treatment plant site, and four portals for the conveyance tunnels in Bothell, Shoreline, Kenmore, and at Point Wells. Construction began in late 2005 and is scheduled to be completed in 2010. The following map provides details on activities at each of these sites.

Once completed, the treatment plant site will have a wastewater treatment plant and odor prevention system, 70 acres of public open space, habitat areas and trails, and a new community and education center.

The system of pipes that will bring wastewater to the treatment plant and treated wastewater to Puget Sound is called the conveyance system. To limit construction at the surface, the conveyance pipelines will be built almost entirely below ground in tunnels 40 to 480 feet deep. Portals are the access shafts where workers, machines, soil and equipment enter and exit the tunnels during construction. Tunnel boring machines (TBMs) are being used to build the 13 miles of large diameter tunnels needed for Brightwater.

To sign up for updates for the Brightwater project or news for the specific sites, please visit: <http://dnr.metrokc.gov/WTDB/brightwater/construction/>.



Ballinger Way Portal

Ballinger Way Portal
Contractors have begun construction on a 25-foot diameter, 200-foot deep TBM retrieval shaft using "ground freezing" - a method that keeps the ground frozen to allow shaft excavation. When shaft construction is completed in late 2008, the site will be inactive until two TBMs arrive from Kenmore and Point Wells and are removed from the shaft. TBM removal is expected in late 2009. After all of the underground work is done, the portal shaft will be sealed and an odor control facility will be built. It will be attractively designed and landscaped.

North Kenmore Portal

At North Kenmore, one portal has been built to launch two TBMs, one traveling east, the other west. Soil from both tunnels will be removed at the North Kenmore Portal and trucked from the site. The boring machines will be taken out of the ground at other locations.

The first TBM, named "Helene," is beginning to tunnel its two-mile path east to the North Creek Portal site in Bothell. In early 2008, a second machine, "Rainier" will begin tunneling west to the Ballinger Way Portal in Shoreline.

When tunneling gets in full swing, there will be an increase in activity at the site. Trucks will deliver concrete sections to line the tunnel and others will remove excavated earth.



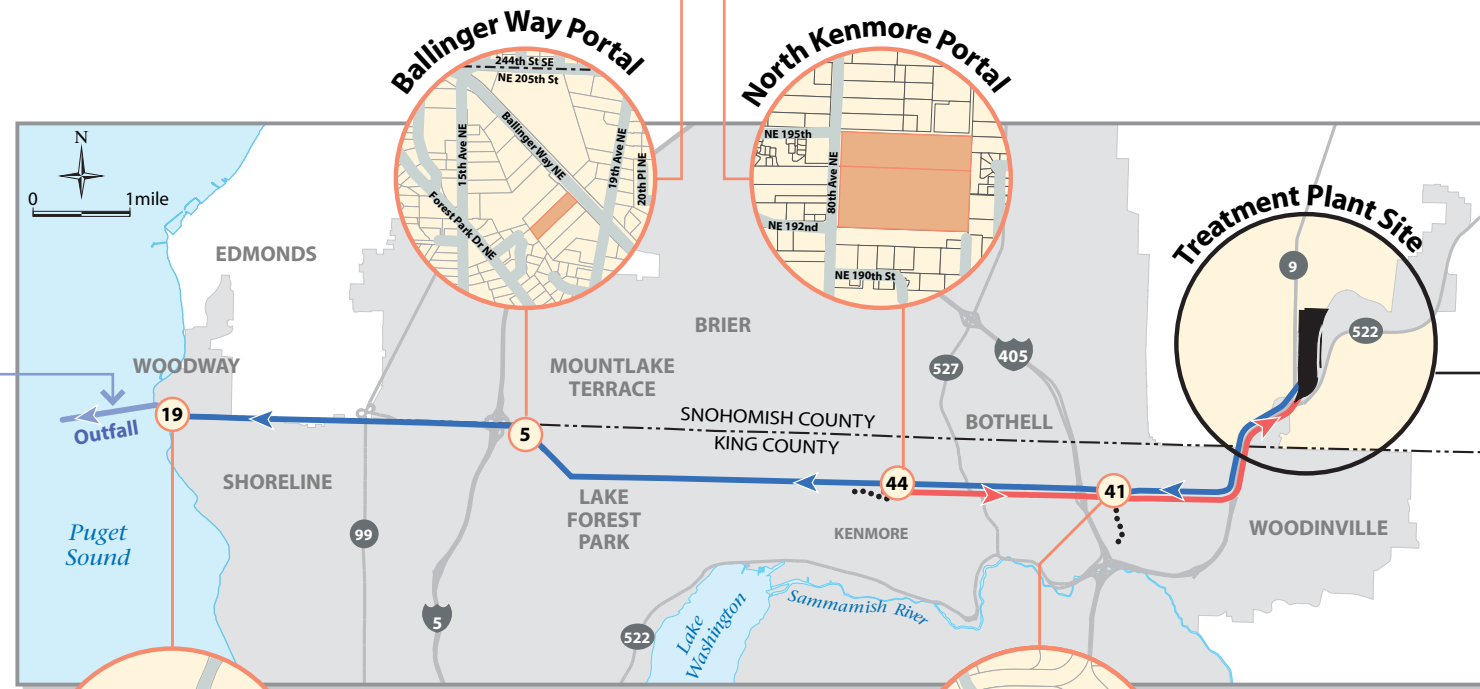
North Kenmore Portal

Marine Outfall

The Marine Outfall Design/Build Contract has been awarded to a team led by Triton Marine Construction from Bremerton, Wash. Construction is expected to begin in spring 2008. Project design geotechnical studies are underway. In the summer and fall of 2007 scientists carried out baseline marine monitoring studies to support this project. Marine animals, eelgrass, and sediments in the area were surveyed and sampled.



Marine Outfall



Treatment Plant Site

Going into 2008, people will see continued site excavation for major structures and the beginning of construction of pipes, tanks and building foundations. Neighbors and SR-9 commuters have already noticed that on the west side of the site, closest to the highway, landscaping mounds are beginning to grow. Once completed, these landscaped hills will screen the treatment plant and improve views from the roadway. Crossed by waterways and trails, this area of the site will also slow and treat storm water, improving the quality of water flowing to Little Bear Creek. Building the mounds also has added environmental benefits; by keeping the dirt on the site, we help reduce trucking traffic, fuel consumption, and greenhouse gases.



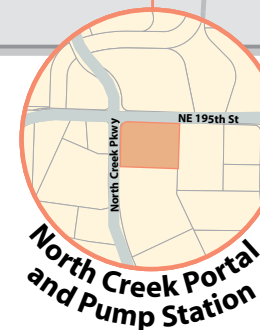
Treatment Plant Site

Point Wells Portal

Contractors have prepared the site with grading, road paving, and installation of utilities. Shoring, or steel supports were installed to stabilize ground prior to excavation of access shafts for tunneling equipment. One shaft on the beach will be used to retrieve a remotely-controlled microtunneling machine; the main shaft will be used to launch the manned TBM that will travel to the Ballinger Way Portal.



Point Wells Portal



North Creek Portal and Pump Station

For the past year and a half, work at North Creek has centered on construction of two large diameter 75-foot deep shafts, one to launch and receive three tunnel boring machines, and a second to house underground portions of a new pump station.

In September, the 19-foot diameter TBM, named "Luminita," was launched from the site to mine more than 2.5 miles east and north to the treatment plant site. This portion of tunneling is expected to take about a year to complete.

Meanwhile, microtunneling of the North Creek Connector continues. The six-foot diameter pipeline has reached its first destination and is expected to be completed in early 2008.



North Creek Portal and Pump Station

LEGEND

- Influent
- Effluent
- Outfall Pipe
- Local Sewer Connection
- > Direction of Flow
- 5 Portal Number
- Treatment Plant
- Portal Site
- Service Area
- Conveyance lines not to scale

tunneling to the future

Celebrating the start of tunneling

This fall marked an exciting milestone for the Brightwater Project as large diameter tunneling got underway. On September 24th over a hundred people came to the start-up celebration at the North Creek Portal Site in Bothell where the tunnel boring machine (TBM) named “Luminita” began digging towards the treatment plant site in Woodinville. Local media, Bothell Business Park employees, elected officials, and school children had an opportunity to see what’s going on behind the portal wall and witness King County Councilmembers Larry Gossett and Larry Phillips formally dedicate the TBM.

Three other similar TBMs will be used to dig the Brightwater conveyance system. Two machines will be launched from the North Kenmore site – “Helene” started digging east to the North Creek portal in September, and in early 2008, “Rainier” will begin tunneling west to the Ballinger Way portal in Shoreline. Next year, the final TBM will get underway from the Point Wells portal and dig east to Ballinger Way.

For more information about the tunneling celebration, including a video of the event, please visit: <http://www.metrokc.gov/exec/news/2007/0924tunnel.aspx>



Luminita in launch position at the factory, photo by LeMoyné Coates, courtesy of HDR



Close up of TBM disk cutter



Celebration participants look down the portal to see the TBM

Stay involved in Brightwater

Community involvement continues to be an important part of the Brightwater project. We have an active speakers bureau and welcome the opportunity to meet with your neighborhood association or community group to discuss the Brightwater project or other water quality issues. If you are interested in arranging a speaker for your next group meeting, please contact us.

We also welcome your comments, concerns, or ideas

Our address:
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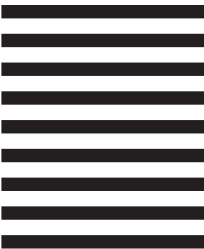
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To keep community members informed about upcoming project activities, we are creating mailing lists for each of the Brightwater construction sites. If you are interested, give us your name, let us know which list you'd like to be on, and tell us how you prefer to be contacted. We occasionally send out e-mail updates between construction flier mailings.

- ☐ Route 9 treatment plant site
- ☐ North Creek portal site (Bothell)
- ☐ North Kenmore portal site
- ☐ Ballinger Way portal site (Shoreline)
- ☐ Point Wells portal site and Outfall (Shoreline/Woodway)

Name: _____

Please send me information by
(please check one or both)

☐ E-mail: _____

☐ U.S. mail: _____

You can also sign up for updates online at:
<http://dnr.metrokc.gov/WTD/brightwater/construction/>

Brightwater Construction Timeline

2006	2007	2008	2009/2010	2010/2011
Work begins at Bothell and Kenmore tunnel construction sites	Work begins at the Point Wells and Ballinger Way tunnel construction sites	Marine outfall construction begins	Conveyance construction completed	Testing, startup, site restoration
Construction begins on north mitigation area of treatment plant site	Major construction at treatment plant begins	Influent Pump Station construction begins in Bothell	Treatment plant construction completed	
Site preparation begins on the rest of the treatment plant site				



**Department of
Natural Resources and Parks
Wastewater Treatment Division**

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